

1 1. A method of treating a wart in a subject, the method comprising  
2 identifying a subject having or suspected of having a wart; and  
3 administering to the subject a composition comprising a fusion protein comprising  
4 (1) a heat shock protein (hsp) or an immunostimulatory fragment thereof, and (2) a protein of  
5 a human papilloma virus (HPV), or an antigenic fragment thereof, wherein the composition  
6 is administered in an amount sufficient to treat the wart.

1 2. The method of claim 1, wherein the hsp is a mycobacterial hsp.

1 3. The method of claim 2, wherein the mycobacterial hsp is a *Mycobacterium bovis* hsp.

1 4. The method of claim 3, wherein the hsp is *Mycobacterium bovis* Hsp65.

1 5. The method of claim 1, wherein the hsp is a member of the Hsp60 or Hsp70  
2 family of proteins.

1 6. The method of claim 1, wherein the HPV is a type 16 HPV.

1 7. The method of claim 1, wherein the protein of the HPV is an E7 protein.

1 8. The method of claim 1, wherein the composition contains about 50 to 5000 µg of  
2 the fusion protein.

1 9. The method of claim 8, wherein the composition contains about 100 to 2000 µg of  
2 the fusion protein.

1 10. The method of claim 1, wherein the composition is administered free of adjuvant.

1 11. The method of claim 1, wherein the subject is a mammal.

1           12. The method of claim 11, wherein the mammal is a human.

1           13. The method of claim 1, wherein the fusion protein is administered in an amount  
2 sufficient to reduce the size of the wart.

1           14. A method of treating, in a subject, a disease or condition associated with a human  
2 papilloma virus (HPV), the method comprising  
3 administering to the subject a composition comprising a fusion protein comprising  
4 (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV, or an  
5 antigenic fragment thereof, wherein the subject is infected with an HPV type that is different  
6 from the HPV type administered to the subject, the composition being administered in an  
7 amount sufficient to treat the disease or condition.

1           15. The method of claim 14, wherein the hsp is a mycobacterial hsp.

1           16. The method of claim 15, wherein the mycobacterial hsp is a *Mycobacterium*  
2 *bovis* hsp.

1           17. The method of claim 16, wherein the hsp is *Mycobacterium bovis* Hsp65.

1           18. The method of claim 14, wherein the hsp is a member of the Hsp60 or Hsp70  
2 family of proteins.

1           19. The method of claim 14, wherein the HPV type administered to the subject is  
2 type 16.

1           20. The method of claim 19, wherein the subject has a disease or condition  
2 associated with an HPV of type 5, 6, 11, 18, 31, 33, 35, 45, 54, 60, or 70.

1           21. The method of claim 20, wherein the subject has a disease or condition  
2 associated with an HPV of type 6, 11, 33, 45, or 70.

1           22. The method of claim 21, wherein the subject has a disease or condition  
2 associated with an HPV of type 6 or 11.

1           23. The method of claim 14, wherein the protein of the HPV is an E7 protein.

1           24. The method of claim 14, wherein the composition contains about 50 to 5000  $\mu\text{g}$   
2 of the fusion protein.

1           25. The method of claim 24, wherein the composition contains about 100 to 2000  $\mu\text{g}$   
2 of the fusion protein.

1           26. The method of claim 14, wherein the composition is free of adjuvant.

1           27. The method of claim 14, wherein the subject is a mammal.

1           28. The method of claim 27, wherein the mammal is a human.

1           29. The method of claim 14, wherein the subject is not identified as being infected  
2 with the type of HPV that is administered prior to administration of the composition.

1           30. A method of treating a wart in a subject, the method comprising  
2 identifying a subject having, or suspected of having, a wart;  
3 administering to the subject a nucleic acid encoding a fusion polypeptide comprising  
4 (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV or an  
5 antigenic fragment thereof; and  
6 expressing the fusion polypeptide in the subject in an amount sufficient to treat the  
7 wart.

1           31. The method of claim 30, wherein the nucleic acid is contained within a viral  
2 vector.

1           32. A method of treating, in a subject, a disease or condition associated with an HPV  
2 infection, the method comprising:

3           administering to the subject a nucleic acid encoding a fusion protein comprising  
4 (1) an hsp, or an immunostimulatory fragment thereof, and (2) a protein of an HPV, wherein  
5 the subject is infected with an HPV type that is different from the HPV type administered to  
6 the subject; and

7           expressing the fusion protein in the subject in an amount sufficient to treat the disease  
8 or condition.

1           33. The method of claim 32, wherein the nucleic acid is contained within a viral  
2 vector.

1           34. The method of claim 14, wherein the disease or condition is anogenital warts,  
2 plantars warts, cervical cancer, cervical dysplasia, anal cancer, anal dysplasia, or recurrent  
3 respiratory papillomatosis.

1           35. The method of claim 32, wherein the disease or condition is anogenital warts,  
2 plantars warts, cervical cancer, cervical dysplasia, anal cancer, anal dysplasia, or recurrent  
3 respiratory papillomatosis.